COVER SHEET

TEST PROCEDURE PREPARATION:

Prepared by: NSWC PHD DAM NECK DET CODE 6D10 Date: 10 JAN 98
TDA Organization and Code

TEST PROCEDURE REVIEW:

Reviewed by: NSWC PHD DAM NECK DET CODE 6D10 Date: 10 JAN 98
TDM Organization and Code

DOCUMENTATION CERTIFICATION:

Approved by: _____ Date: _____
TDD Organization and Code

REVISION RECORD

REV/CHG	DESCRIPTION	APPROVAL INITIAL	APPROVAL DATE
-	Original Issue	NSWC	10 Jan 98
A	Incorporated validation changes.	FES	21 June 99

LIST OF EFFECTIVE PAGES

PG-REV	PG-REV	PG-REV	PG-REV	PG-REV	PG-REV	PG-REV
1 - A	2 - A	3 - A	4 - A	5 - A	6 - A	7 - A
8 - A	9 - A	10 - A	11 - A	12 - A	13 - A	

TEST OUTLINE

1. OBJECTIVE:

   To verify that the 63812-204650 Decoder, RADDS to 3 Wire DX/DY (63812-204650 Decoder) is operating properly with AN/UYQ-21 format interfacing equipment.

2. ESTIMATED TESTING TIME:

   1 hour

3. REFERENCES:

   SE245-AE-MMO-A10, Technical Manual for the Radar Signal Distribution Switchboard SB-4229A(V)/SP, Addendum 4, EC-4.

4. TEST OR SUPPORT EQUIPMENT AND MATERIAL:

GENERIC NAME	QUANTITY	IDENTIFYING INFORMATION
None		

5. COMPUTER PROGRAMS REQUIRED:

   None

6. PREREQUISITES:

   a. 45011-3-066, 63812-204650 Decoder, RADDS to 3 Wire DX/DY ILO
   b. 41111-4-001, OJ-451(V)9/UYQ-21 Display Console Test (AN/UYK-43)
   c. 41111-4-012, AN/UYQ-21 Display Group Video Distribution Test
   d. 45011-5-055, CV-3989(V)1/SP Analog to Digital Converter Operability

7. SPECIAL CONDITIONS AND SERVICES:

   115 VAC, 1 ϕ, 60 Hz Power

8. EQUIPMENT INVOLVED IN TEST:

   a. Ships selected radar
   b. CV-3989/SP or CV-3989(V)1/SP Signal Data Converter
   c. 63812-204650 Decoder
   d. Interfacing equipment accepting AN/UYQ-21 format to verify azimuth (OJ-451(V)9/UYQ-21 Display Console)

9. CONFIGURATION:

   No field changes required to run this test.

TEST OUTLINE

10. METHOD:

A Radar Display and Distribution System (RADDS) Data Stream input signal will be decoded with various levels and types of output signals to be verified. An OJ-451(V)9/UYQ-21 Display Console is used to verify antenna azimuth bearing information.

11. STATION ASSIGNMENTS:

STATION	NO. PERSONNEL	COMMENTS
63812-204650 Decoder	1 Electronic Technician	Performs Operability Test
Selected Radar	1 Operator	Operates Radar

SAFETY INSTRUCTIONS

a. The operation of this equipment involves the use of high voltages that are dangerous to life. Extreme caution must be exercised at all times. Do not work on open or disassembled units when power is applied.

b. Comply with ships regulations and safety precautions prior to antenna rotation and radiation. Remain clear of swing radius of rotating antennas.

c. Test personnel will strictly adhere to all safety precautions including, but not limited to, all Cautions and Warnings contained in this test procedure and applicable documents.

INITIAL CONDITIONS AND SETUP

STEP	STATION	INSTRUCTIONS
		NOTE Use a CV-3989/SP or CV-3989(V)1/SP that is being fed from an operational radar.
1	63812-204650 Decoder	Ensure a proper RADDS Data stream is being supplied to RADDS 1 (J2), RADDS 2 (J3), and RADDS 3 (J4) input connectors for the 63812-204650 Decoder modules (Part Number 204657-1) under test.
2	63812-204650 Decoder	Set AC POWER switch to OFF position.

TESTING STEPS

STEP	STATION	INSTRUCTIONS
1	63812-204650 Decoder	Set AC POWER switch to ON and observe POWER ON indicator is lit.
2	63812-204650 Decoder	Observe the following power indicators are lit on module 1A1A1 (Part Number 204657-1): Power Indicator -15V +15V +5V RADDS
3	Radar	Set the associated radar to RELATIVE mode with the antenna to a fixed bearing between 0° and 90° using either the Synchro Amp for the associated radar or a radar display not associated with the 63812-204650 Decoder under test. RECORD the ship antenna angle on Test Data Recording sheet. NOTE Interfacing equipment accepting the Q-21 format must be used to verify azimuth in steps 4, 6, 8, 10 and 12.
4	Q-21 Console	Verify interfacing equipment indicates same fixed azimuth angle as ships radar antenna ±1°. RECORD on Test Data Recording sheet.
5	Radar	Set the antenna to a fixed bearing between 90° and 180° using either the Synchro Amp for the associated radar or a radar display not associated with the 63812-204650 Decoder under test. RECORD the ship antenna angle on Test Data Recording sheet.
6	Q-21 Console	Verify interfacing equipment indicates same fixed azimuth angle as ships radar antenna ±1°. RECORD on Test Data Recording sheet.

TESTING STEPS

STEP	STATION	INSTRUCTIONS
7	Radar	Set the antenna to a fixed bearing between 180° and 270° using either the Synchro Amp for the associated radar or a radar display not associated with the 63812-204650 Decoder under test. RECORD the ship antenna angle on Test Data Recording sheet.
8	Q-21 Console	Verify interfacing equipment indicates same fixed azimuth angle as ships radar antenna ±1°. RECORD on Test Data Recording sheet.
9	Radar	Set the antenna to a fixed bearing between 270° and 359° using either the Synchro Amp for the associated radar or a radar display not associated with the 63812-204650 Decoder under test. RECORD the ship antenna angle on Test Data Recording sheet.
10	Q-21 Console	Verify interfacing equipment indicates same fixed azimuth angle as ships radar antenna ±1°. RECORD on Test Data Recording sheet.
11	Radar	Rotate the associated radar antenna.
12	Q-21 Console	Verify interfacing equipment indicates azimuth rotation in the correct direction. RECORD on Test Data Recording sheet.
13		Repeat steps 3 thru 12 for module (Part Number 204657-1) installed in 1A1A2 location, using RADDS 2 input jack (J3).
14		Repeat steps 3 thru 12 for module (Part Number 204657-1) installed in 1A1A3 location, using RADDS 3 input jack (J4).

SHUTDOWN AND SECURING

STEP	STATION	INSTRUCTIONS
1	63812-204650 Decoder	Set AC POWER switch to OFF position.

TEST DATA RECORDING

EQUIPMENT UNDER TEST

EQUIPMENT	SERIAL NO.
63812-204650 Decoder	_____

PREREQUISITES

a. 45011-3-066, 63812-204650 Decoder, RADDS to 3 Wire DX/DY ILO
b. 41111-4-001, OJ-451(V)9/UYA-21 Display Console Test (AN/UYK-43)
c. 41111-4-012, AN/UYQ-21 Display Group Video Distribution Test
d. 45011-5-055, CV-3989(V)1/SP Analog to Digital Converter Operability

Prerequisites Completed: _____ **Signature and Date:** _____

NOTE

Write "N/A" in ACTUAL RESULTS spaces for test sections where modules are not present in the 63812-204650 Decoder under test.

TEST DATA RECORDING

STEP	TEST ELEMENT	EXPECTED RESULTS	ACTUAL RESULTS
1A1A1 DECODER MODULE			
3	SHIPS ANTENNA ANGLE	0° – 90°	_____ Deg.
4	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
5	SHIPS ANTENNA ANGLE	90° - 180°	_____ Deg.
6	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
7	SHIPS ANTENNA ANGLE	180° - 270°	_____ Deg.
8	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
9	SHIPS ANTENNA ANGLE	270° - 359°	_____ Deg.
10	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
12	Q-21 CONSOLE	Rotation	_____

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE

TEST DATA RECORDING

STEP	TEST ELEMENT	EXPECTED RESULTS	ACTUAL RESULTS
13	1A1A2 SECOND DECODER MODULE		
3	SHIPS ANTENNA ANGLE	0° - 90°	_____ Deg.
4	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
5	SHIPS ANTENNA ANGLE	90° - 180°	_____ Deg.
6	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
7	SHIPS ANTENNA ANGLE	180° - 270°	_____ Deg.
8	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
9	SHIPS ANTENNA ANGLE	270° - 359°	_____ Deg.
10	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
12	Q-21 CONSOLE	Rotation	_____
14	1A1A3 THIRD DECODER MODULE		
3	SHIPS ANTENNA ANGLE	0° - 90°	_____ Deg.
4	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
5	SHIPS ANTENNA ANGLE	90° - 180°	_____ Deg.
6	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
7	SHIPS ANTENNA ANGLE	180° - 270°	_____ Deg.
8	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
9	SHIPS ANTENNA ANGLE	270° - 359°	_____ Deg.
10	Q-21 CONSOLE	Ship Antenna Angle ±1°	_____ Deg.
12	Q-21 CONSOLE	Rotation	_____

_____	_____	_____	_____
SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE

TEST EQUIMENT USED

List all test equipment utilized in the test including all general and specialized test equipment, special test cables, attenuators, and any other materials requiring calibration. Include extra sheets as necessary to identify all test equipment.

GENERIC NAME	MODEL	SERIAL NO.	CALIBRATION DUE DATE	REMARKS

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE

COMMENTS

This sheet is provided for the test conductor or Government witness to make appropriate comments including the following:

a. Visual observations of dynamic responses;
b. Erratic or unusual equipment behavior;
c. Operational or handling difficulties;
d. Procedural corrections;
e. Equipment malfunctions;
f. Discrepancies noted during test conduct; and,
g. Waivers including reference to authorization document, i.e., letter, message, etc.

Indicate if a Test Problem Report (TPR) was generated with respect to these or other problems.

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE